Safety Nets and Social Welfare Expenditures in World Economic History

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Abstract

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The safety nets in high-income countries before 1900 and in low-income countries today were based on savings and aid from extended family, friends, charities, churches, and small amounts from local governments. Mutual societies and eventually insurance companies offered insurance against lost earnings from sickness, injury, death, and old age. Germany led the way in mandating that employers provide benefits. Since 1900 higher income nations have sharply increased public and private social welfare expenditures to well over 20 percent relative to GDP. A large share of this rise has come in increases in aid to the elderly and health care expenses, often in the form of contributory social insurance financed by payroll taxes on workers and employers. Meanwhile, noncontributory transfer programs for the poor have risen relatively little. In most countries, the employer's share of payroll taxes are higher than the worker's share. There are some major countries who have followed a path of reliance on private programs, which are largely financed by employers. Probably the most striking feature of social welfare programs world-wide is the very large variation in expenditures relative to GDP, in the categories of spending, and in the mix of taxation, private programs, and government programs.

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As nations experienced large increases in per capita income over the past 200 years, they have increased the extent of their safety nets. In many settings safety nets have been provided by extended families, friends, and local communities. Multiple generations and extended families provided care for the elderly, the infirm, or children when problems developed. Friends, churches, and charities helped. Local governments provided limited aid to the indigent. Some groups developed mutual societies in which members agreed to provide financial help to group members who became ill or were injured. Market insurance eventually developed out of the mutual societies, so that households could purchase life insurance, sickness insurance to replace lost earnings, health insurance to pay for health care, invest in old-age pensions, and more recently parental leave. During the early 1900s in higher income nations, employers increasingly provided these options to their workers.

Over the past 100 years or so governments have become more heavily involved in operating social insurance programs often financed by payroll taxes on employers and workers based on the worker's wage. By far the largest growth in safety net expenditures has occurred in government-funded social insurance programs. Comparisons from Peter Lindert's study *Growing Public* show that Denmark and the Netherlands in 1900 had the highest level of government funding of the safety net at 1.4 percent relative to GDP in countries that later joined the Organization of Economic Cooperation and Development (OECD) in Table 1. By 1930 Germany had taken over the lead at 5 percent relative to GDP but most of the countries were still below 3 percent. By 2017 OECD statistics on gross public social welfare spending in Table 1 show that among OECD countries Mexico had the lowest share relative to GDP of 7.5 percent

and the share reached as high as 31 percent in France.[1] Estimates in Table 2 for 45 countries in the rest of the world in 2017 show a much broader range from 22.2 percent in Ukraine to 0.2 in Pakistan. The two most populous countries, China and India were at 6.3 and 2.7 percent respectively in Table 2.

The public social welfare expenditure shares of GDP show that countries around the world follow a wide range of practices with respect to social protection. The broad range of practices extends to how much different countries devote to the various categories of social protection expenditures, as well as the extent to which they rely on private and public provision of the support, how much they tax the benefits that are provided, and who pays for the benefits.

I. Markets, Governments, Adverse Events, and Poverty

Households have dealt with adverse events in a variety of ways for centuries. The adverse events include loss of income, loss of job, death, health problems, and disability. The causes can be innate problems from birth; or due to new events like unemployment, injury, death of a breadwinner, or illness; or due to old age.

Consider a situation where the head of the household has a 2 in 100 chance of having an injury that disables him for a year and his income is $1000. This was not an uncommon situation around 1900 in mining or manufacturing. To protect against the possibility of an injury, the household might have saved in advance. Yet, savings often were inadequate because an injury could occur before a full year's earnings were saved. Some household heads joined mutual societies that pooled funds and provided limited benefits to injured members. As early as the

[1] The phrase "relative to GDP" is used because many social welfare expenditures are transfer payments, which are not included as expenditures in GDP calculations. To promote brevity, we will use "of GDP" in the rest of the paper but mean "relative to GDP."

14th century there are records of German miners forming such a group (Commissioner of Labor, 1911, p. 38) Insurance companies often developed out of mutual societies and expanded their customer base.

If insurers knew the probability of the injury, their annual premium would likely equal the expected loss from the injury of $20--the injury probability of 2/100 times the $1,000 in earnings lost, plus the administrative costs associated with the insurance, say $10, for a total premium of $30. In competitive labor markets competition among employers for workers for a dangerous job might have been enough to drive annual earnings high enough to cover much of this $30 cost. Insurance markets worked best when insurers knew the risk of injury, sold to workers who had the same risks, the risks were uncorrelated across workers, and insurers could sell to a large number of buyers to allow the actual risk of injury to hit the average through the law of large numbers. If the accident probability varied across workers, the insurance markets still could work well if insurers could identify the differences and charge higher premiums to the riskier purchasers.

The problem known as "adverse selection" developed when insurers could not identify the expected loss for each household. The risk in the example above was 2/100 and the expected loss was $20. Say instead that half of the workers had a 1/100 risk and half had a 3/100 risk. The expected risk for the group as a whole was still 2/100. If the insurer did not know who had which risk, charged a premium of the $20 expected value, and everybody was risk neutral, adverse selection arises because only the workers with the 3/100 risk would buy, and the insurer would soon be bankrupted. This might not have happened if the workers with 1/100 risk were so averse to risk that they would have paid a $30 premium that was greater than their expected loss of $10. Alternatively, the insurer would have had to charge at least a $30 premium, leaving the

people with 1/100 risk without insurance or they might not have sold insurance at all, and thus no workers could get insurance. Another way to solve this problem was for the government to mandate that all workers buy insurance. This avoided the adverse selection problem by including all workers in the insurance pool, so that the average risk is an accurate measure of the overall risk. Yet another way was for the government to require all employers to sign up for the government's own insurance system, which is essentially the path followed by many countries that established universal health insurance.

Costly information can also lead to problems with "moral hazard," when someone who is insured against a specific risk takes more of that risk or reports more of that risk because they are protected against it. Most workplace risk insurers, whether government or private, have tried to protect against moral hazard by limiting the benefits to 50 to 75 percent of the lost earnings and requiring delays before payments start, thus forcing the worker to share some of the costs of the loss. Sweden's social insurance programs ran into serious budget problems after they raised replacement rates near 100 percent in the late 1970s. They responded by cutting the replacement rates closer to 80 percent in the 1990s (Lundberg and Amark 2011). Health insurers often required the buyer to pay a "deductible" and cover the costs of say the first $300 and/or pay a co-pay of say 10 percent of the additional costs. The mutual societies, which often were smaller and knew a great deal about their fellow members, solved much of the adverse selection and moral hazard problems by carefully screening their recruits and cutting off members who were abusing the benefits.[2]

[2] For economic history papers on adverse selection and moral hazard in various settings, see Andersson et al. (2021), Fishback and Kantor (2000), Guinnane and Streb (2011), Murray (2005, 2007), and U.S. Commissioner of Labor 1893.

When workers and employers pay the premiums to the government for the workplace injury insurance, agencies like the OECD and various governments describe it as "public social insurance." If the employer operates the insurance with or without contributions from the worker, it is termed "private social insurance." A large majority of funds distributed for social welfare come through governments, and many governments finance public social insurance through payroll taxes on workers and employers. In a subset of countries, the benefits paid could just be paid by general tax revenues that are not tied to contributions by the individual or employer. These are typically defined as "public assistance" or "safety net" programs and do not involve a contribution to the program from the recipient or their former employer. The programs are typically "means-tested" and designed for people in poverty who are unable to support themselves, particularly if they have children.

The issues of adverse selection and moral hazard have bedeviled private insurance markets, social insurance, and public assistance from their beginnings. Moral hazard in various forms has arguably been the issue that has led to the most administrative costs associated with these programs. Hardly anybody has had qualms about providing benefits to the "worthy" poor; the people who are willing to work but have hit lean times through no fault of their own. The moral hazard issue arose when the benefits were being paid to people whose own choices greatly contributed to their demise. Charities, churches, and progressive reformers in the late 1800s and early 1900s interviewed recipients to determine their needs, the reason why they were in trouble, and to suggest ways for the recipients to reform their behavior, sometimes with threats to remove them from the relief rolls if the behavior continued. People on relief often felt a social "stigma," which limited moral hazard to some degree, but was painful for "worthy" recipients. Governments have resolved this issue by offering opportunities to work on government projects

and thus "earn" their benefits, as in the New Deal in the 1930s and in rural work guarantees in modern India. Advocates for social insurance recognized that social insurance reduced stigma because the person or their employer had paid the "premium" upfront for the benefits received by the worker. Similarly, Gustav Moller, the Swedish Minister of Health and Social Affairs at various times in the early 1930s and from 1939 through 1951 also recognized this and advocated for a universal program so that all people would be eligible for the benefits so that the stigma would be fully removed (Rothstein 2017).

II. Political economy.

The political economy of social welfare spending has depended heavily on the type of benefits discussed. The situation is quite different for pure means-tested transfers than for social insurance. Scholars often model pure transfer payments in median voter models and some add warm glows from charitable giving. Societies with higher incomes can afford the transfers and the transfers are more likely when voice and voting power is spread throughout the population, particularly with the addition of political power for women. However, means-tested pure transfers to the poor have always been a small share of the economy. Peter Lindert's (2004, chapters 3 and 4) study of public poor relief in leading European countries between 1750 and 1880 showed that in most years the relief accounted for less than 1 percent of GDP with a peak in the 1830s for England at around 2.5 percent. He argues that charity from churches for the poor was relatively low in the 19th century. Even in the modern era these transfers account for less than 2 or 3 percent of GDP without health spending for the poor (World Bank, Safety Net 2018, pp. . Up to around 1900 health care spending for the poor was very low. Since then it has risen so that health care spending for the poor in OECD countries might add about 1-2 percent of

GDP hidden in the universal spending and up to 6 percent in the U.S, which has much higher overall health spending than any other country.

Why is this spending so low? In less developed nations with large numbers of people in poverty, the problem of poverty has been too large and the per capita resources available for distribution too few to do much. Even in more developed economies societies where the vote is widely distributed there have been mixed emotions about pure transfers. Many have been willing to provide aid to the worthy poor who are in trouble through no fault of their own, which often tends to be a small share of the population in higher-income economies. Political battles have commonly been fought over why recipients end up in poverty, and they have been exacerbated in societies with greater ethnic and racial diversity. Was the economy and the environment at fault or was the cause a failure of the individual to take responsibility for one's actions? The latter issue focuses on the moral hazard problems in dealing with the "unworthy poor," fraud, disincentives to return to work, and the stimulus to have more children among poor mothers.

In the modern era the expansion of the contributory social insurance programs have reduced the need for pure transfers through their provision of benefits in settings that would have led to pure transfers in the past. The growth in safety net and social welfare programs has largely come through social insurance programs in which contributions from workers and employers largely fund the program. The political economy of these programs differed as a result. The social stigma was gone because the worker paid up front for the benefits or the benefits were part of an employment package covered by employer taxes. The political battles than became more of an interest group struggle between workers, employers, private insurers, and reformers. At first blush it might seem that employers would be opposed to making

contributions. Their opposition would have been weakened if they believed that the new program would allow them to pay lower cash wages in compensating differences for their contributions. Fishback and Kantor (2000) found some evidence that this occurred for nonunion workers for injury insurance in the U.S. A number of studies of labor regulation in America have found that large employers joined reformers in compromise regulations that legislated programs that matched what the employers had already been offering. The reformers gained broader coverage and the employers stopped cost undercutting by competitors who now had to conform to the higher standards. Small firms, agricultural producers and hirers of domestic servants often found ways to gain exceptions to being part of the program (Fishback 1998). Unions at times had mixed emotions because they had used sickness and injury funds and negotiations for better working conditions to attract members. They feared that government benefits would make it more difficult to attract workers to the union. In Sweden and other Nordic countries the unions resolved these issues by seeking subsidies from government for their funds, and unions today still play a significant role in their social welfare systems (Van Rie et.al. 2011). These interest group struggles were also influenced by political ideologies. For example, the U.S. Commissioner of Labor (1893, p. 20) suggested that Bismarck and his followers partly chose the German path to employer mandates to “cure socialism 'by a hair from the dog that bit me.’"

It is generally accepted that social welfare expenditures as a share of GDP tend to be higher in countries where people have more political voice, GDP per capita is higher, and women have more economic clout. Based on demographics we might also expect higher social welfare expenditures in areas where there are larger ratios of the elderly to the economically active workforce and where there are more children relative to the workforce. Cross-sectional

correlations between the social welfare measure around 2015 and these correlates between 2010 and 2015 are all consistent with these views with correlations typically above 0.6 in absolute value. However, when they are included in the regression analysis in Table 3, the only statistically significant relationships are with the old age dependency ratio, the gender inequality measure, and voice in the government. The strongest magnitudes are found for the old age dependency ratio; a one standard deviation increase is associated with an increase of 0.62 standard deviations in the public spending measure. The one-standard deviation impacts of gender inequality and voice in the government are much smaller at -0.16 and 0.15, respectively.

III. Activity Prior to World War I

In the 1700s and most of the 1800s households struck by adverse events in the now developed economies relied on their own savings and aid from extended family and friends with some meager help from churches, local charities, and local governments. Family networks were stronger because many stayed near their birthplaces. Poverty programs in countries like Great Britain and Germany were primarily run by local governments with tight residency requirements, orphanages for kids, almshouses, workhouses, and some outdoor relief (Boyer 1983 and 2019 and Hennock 2007).

The current situation in the least developed countries in Africa looks similar. A survey of households in the bottom 40 percent of the income distribution in several African countries found that fewer than 10 percent of households and in most cases fewer than 3 percent in the bottom 40 percent of the income distribution expected to rely most on aid from government and nongovernment organizations (NGOs). They were about 15 to 25 percent most likely to rely on their own savings and 5 to 20 percent most likely to rely on family and friends (Beegle and Christiaensen 2019, p. 218).

Households also insured against risk by joining mutual societies, which had a long history. In the Germanic states laws allowing the creation of voluntary mutual societies can be found in the 12th and 13th centuries (U.S. Commissioner of Labor 1893, p. 38). Many mutual protections were associated with guilds. In the U.K. non-guild mutual societies that survived into the early 1900s had been started in 1555 and 1687 (U.S. Commissioner of Labor, 1909, p. 1551). The German Empire under Bismarck was the first to set up compulsory mutual societies tied to employment. Before the empire was formed several Germanic states had set up laws for allowing groups to form sickness, burial, relief societies, and savings banks. Some made sickness association mandatory for employers. By 1880 Prussian statistics showed that about a 1.26 million out of 2.4 million employed in industry and mines were in friendly societies of some form. The miners' societies were funded half by employers and half by workers and provided for sickness, accident, and burial insurance, while granting pensions to orphans, widows, and invalids. Dissatisfied with the coverage, the government established compulsory programs for sickness insurance in 1883, accident insurance in 1884, and old age pensions in 1889. (U.S. Commissioner of Labor, volume I, 1893, pp. 30-42.

Most European countries followed a similar path of setting up rules for friendly societies, union funds, and employer funds, although their timing differed. Hungary in 1891, Austria in 1898, Luxemburg in 1902, and Norway in 1909 followed Germany in making sickness insurance compulsory. Belgium, Denmark, and France provided subsidies and Sweden followed suit in the early 1910s. Compulsion was far more common for workplace accidents. Until the 1890s most countries had handled workplace accidents by requiring negligent employers to compensate their injured workers. Between 1887 and 1909 18 European countries and parts of Australia and Canada had adopted some form of workers' compensation that required employers to

compensate employment-related industries. All but 5 U.S. states adopted similar rules by 1929 (U.S. Commissioner of Labor 1911, pp. 3-27; Fishback and Kantor 2000.

There were voluntary unemployment insurance funds in a variety of countries. By 1909 local and/or national governments were providing subsidies in Belgium, Denmark, France, Germany and Norway. Old-age and invalidity insurance was provided in a variety of ways. Out of the following group of countries—Austria, Belgium, France, Great Britain, Italy, and Spain, unions were providing funds in at least 3, mutual societies were providing benefits in 5, the government was marketing annuities in 4, government subsidies were being provided for funds in 4, and there were compulsory programs for at least some class of workers in 6 (U.S. Commissioner of Labor 1911, pp. 3-27).

Provisions were made for widows and orphans in miners' relief societies in 5 of the countries. In the U.S. a large majority of states established specific "mothers' pension" laws between 1911 and 1920, often at the same time or soon after workers' compensation laws were adopted. By 1910 many social workers had decided that it was better to have children of widows live with their parent rather than in alms houses. The laws passed relatively quickly in part because widows and orphans accounted for a very small share of the population, it was often cheaper to pay direct benefits than house the kids in alms houses, and the states typically provided for the existence of the programs at the local level without providing funding. The states added means-tested benefits for the elderly in the early 1930s, and the old-age and mothers' pension laws became fully funded in the 1935 Social Security Act, which required all counties to have funding and provided federal matching grants.

Nearly all of the modern government and private social welfare programs developed out of these earlier programs. Old age programs often started out as means-tested programs

designed to allow the elderly to live on their own. Central governments in the higher income countries began to construct the modern old-age contributory pensions in the 1930s and soon after World War II with contributions from both workers and employers. Health insurance began to expand as medical technologies improved and the costs of obtaining care became increasingly expensive. These old-age pension and health insurance programs have accounted for a large portion of the rise in social welfare spending in the high income countries, while sickness insurance, and unemployment insurance have remained a relatively small percentage of GDP. Accident insurance costs have also stayed low because workplaces have become dramatically safer, particularly in the countries that have largely become service-based economies.

IV Categories of Social Welfare in the Modern Era

The focus of the rest of the paper is the modern era because there is social welfare expenditures have become much more complex in advanced countries, there is enormous world-wide variation in expenditures and in the institutional structures, even among countries long thought to be similar. The variation is documented in Tables 2 and 4 through 8, which show the wide variation in different categories of spending across countries, differences in their reliance on private and public programs, the extent of taxation of benefits and consumption, and information on the shares of earnings going to payroll taxes.

Health care expenditures have contributed substantially to the rise in social welfare spending in the past 80 years. In the early 1900s many of the sickness insurance and accident insurance schemes spent much less on medical care than on replacing lost earnings. As the range and effectiveness of health care has improved, expenditures as a share of GDP have risen markedly. For the 18 countries with information for 1970 in Table 4, the median health share of

GDP rose from 4.8 percent in 1970 to 10.5 percent in 2017. The median share that year for the 44 major countries in Table 4 was 8.2 percent. Outside the OECD, the figures in Table 2 show that the median expenditures on health in were about 5.1 percent of GDP.

To finance health care, countries have relied on a mix of government financing, government mandates that require the provision of health insurance, typically by employers, voluntary schemes through employers or mutual societies, and out-of-pocket expenditures by households. The OECD does not include the out-of-pocket expenditures in their calculations of social welfare spending. The OECD countries have relied heavily on government financing and mandates with shares of health spending funding above 50 percent in 2017, while the nonOECD countries in Tables 2 and 4 tend to be below 50 percent. A number of OECD countries in Table 4 have allowed more private activity after 1980 after discovering that some groups were finding ways around the prior limitations.

Old age and survivor benefits are the other category that accounts for large shares of the expenditures. The data in Table 5 for the OECD countries includes pension programs, payments to the low-income elderly, and payments to the survivors of the deceased. Comparisons of the medians at the bottom of Table 1 and Table 5 for OECD countries suggest that old age expenditures have accounted for one-third or more of public social welfare expenditures since 1980. In many countries in the rest of the world in Table 2 the public elderly nonhealth spending is an even higher share of public social spending. Some elderly expenditures in the table are larger than the total public social welfare expenditures because of differences in reporting years for the specific categories.

Many of the countries face long term challenges in the financing of old-age pensions because they have been operating pay-as-you-go systems in which benefits are being paid out to

current retirees based on trust funds that contain bonds that are essentially promises to collect enough taxes in the future to pay promised benefits. The countries with problems often are facing rising population shares over the age of 65 relative to the share of the populations currently working and paying taxes into the system. Some countries, like Sweden, have begun to address these problems by moving away from promising a defined benefit amount to basing future payouts on the payroll contributions made by the workers and their employers. Sweden and other countries, like Chile, have also set up private accounts (Scheiber and Shoven 2000; (Weaver 2003/2004)).

Sickness programs provide payments for lost earnings during times of illness, while **disability and injury programs** provide payments to replace potential earnings and medical care related to a disability or injury. The cash payments in these program as a percentage of GDP are much lower than in the health and old age programs. For 22 OECD countries in Table 5 the median percentage fell from 2.1 percentage points of GDP in 1980 to 1.7 percentage points by 2017, while the median for non-OECD countries in Table other stayed the same at 1.7 percent in 2000 and 2017.

The path of cash benefit payments in these categories has been influenced by multiple changes. In general, injury rates for occupations have fallen markedly over the past 120 years, pushing the shares down while improving workers' lives. On the other hand, there are increasing pressures associated with expansions of the types of injuries and diseases covered by the programs.

Public family benefits in Table 5 include means-tested payments to households with poor children, cash allowances for all children, parental leave, schooling and care for children under 5, and nutritional programs. Much of the growth in spending in this area has taken the

form of increased parental leave and public education and care for children under 5. In most countries with high public child spending, the large majority of the spending goes to families that are not poor because the benefits are universal.

V. Private Expenditures, Taxation, and Net Total Social Welfare Expenditures.

Although many emphasize gross public spending in discussions of social welfare, gross public spending offers an incomplete portrayal of social welfare spending. In the late 1800s and early 1900s the countries that began expanding access to safety nets often followed two paths, 1) setting up laws that allowed for the creation of voluntary mutual societies among groups, workers, and 2) mandating that employers provide funds for sickness, accidents, and/or pensions. A number of countries in the modern era still rely on voluntary private social welfare expenditures, which are primarily provided in programs through employers. In 2017 the leaders shown in Table 6 are Canada at 7.1 percent of GDP followed by the Netherlands, U.S., and U.K. above 5.5 percent. The countries relying the most on mandatory private benefits were Switzerland at 10.8 percent of GDP and the Netherlands, Iceland, and U.S. above 6.2.

The value of the social welfare spending for recipients is strongly influenced by the taxes that recipients are required to pay on their benefits and the sales taxes and value added taxes they pay when purchasing items. Meanwhile, some countries provide social welfare benefits through the tax code by allowing tax deductions for each child and cutting taxes or providing subsidies to the working poor with children. The countries where taxes reduced the ability of recipients to consume most typically taxed the benefits received by recipients more heavily and had high value added taxes on consumption. Among the OECD countries in Table 7, Denmark and Finland had the largest gaps between gross public and net public spending of more than 6 percentage points of GDP. Only the U.S. in 2005 and 2017 and Korea and Mexico in 2005 had

tax structures in which net public spending was higher than gross public spending. Adding net private benefits leads to dramatic changes in the rankings when comparing net public to net total spending of GDP. For example, the Netherlands moves from 31st to 8th, Switzerland moves from 26th to 6th and the U.S. moves from 11th to 2d.

In most countries a large share of public social welfare expenditures is financed through payroll taxes on workers' earnings paid by employers and workers. Table 8 shows estimates of the tax rates paid by a production worker who was single with no children and was paid average earnings (including overtime) in that country. The OECD (2002) descriptions of these payroll taxes for both workers and employers in nearly all of the countries explicitly tie them to specific programs. The combined social welfare tax bite for workers and employers ranged from a high of 49.5 percent in France to a low of zero in New Zealand and Denmark with a median of 30.6. The employers' contributions exceeded the workers' contributions in 25 of the countries in the table. Outside the tax system employers also finance most of the private voluntary and mandated expenditures for their workers, and a sense of their payments can be seen in Table 5.

VI. The Large Variation in Spending, Institutions and Financing Across Countries in the Modern Era.

The fascinating feature about the modern safety nets and social protection programs is the extensive variation in how countries structure their institutions and financing of the benefits. Most of the focus here is on the OECD countries because the OECD provides the extensive detail shown in Tables 4 through 7.

In 2017 France was the leader in public (31.5 percent), net public (27.8) and net total Spending (31.2) of GDP in Table 6. France is the classic European Social Democratic model. It ranks third in old-age spending (13.6 in Table 5), health spending (11.3 in Table 4) and seventh

in family spending (2.9 in Table 5) as shares of GDP. France had a high combination of income taxes on recipient's benefits and consumption taxes that caused the net public percentage to be 3.7 percent lower than the public percentage of GDP in Table 6. They also followed a strong social insurance model because they ranked first among countries in the total payroll tax rate on production workers' earnings at 49.5 percent overall and 35.1 percent for employers in Table 7. The worker's payroll tax rate was 14.4 percent, which ranked ninth among the OECD countries. France's government financed 83 percent of its health care in Table 4, which ranked seventh. France also offered opportunities for private voluntary social spending in Table 5 and ranked 6th at 2.8 percent of GDP.

The country that seems the closest to France was Sweden, which also had high private voluntary spending of 3.4 percent of GDP along with high rankings in the same categories as France. Japan resembles a lower spending version of France with top eight rankings in health and government health spending, worker payroll taxes, and voluntary private expenditures but rankings of 12th and 13th in public and net total social welfare spending.. The other countries that were most similar were Austria, Belgium, Germany.

Sweden is often described as a primary example of the Nordic model of social welfare spending, joined by Denmark, Finland, and Norway. All four countries are ranked in the top nine in public spending of GDP, They all rank highly in family benefits and in the 8 to 12 range for health spending. All four also rank in the top eight in terms of taxing benefits and consumption with reductions from gross public to net public spending ranging from 4.2 to 6.3 percentage points of GDP. They diverge, however, in the way they finance the spending. Sweden largely follows a government social insurance model in which employers pay most of the freight, ranking fifth in the payroll tax rate for employers at 31.4 percent. Denmark is at the

other extreme. They have no payroll taxes for workers or for employers, although they do have mandatory private expenditures for old-age pensions and disability that add 2.1 percent of GDP in private spending. Instead, Denmark has relied most heavily on general taxation, including income taxes, where they rank first in Table 8 with an average income tax rate of 36 percent.

The Southern European countries—Greece, Spain, Italy, and Portugal—also have high public spending at 23 to 27 percent of GDP, which ranked them between 5th and 12th. The high expenditures are driven largely by old-age pensions. Italy and Greece rank first and second with expenditures greater than 15 percent of GDP, while Portugal was fifth with 12.7 and Spain seventh at 10.9. The countries followed the French social insurance model in relying heavily on employer payroll taxes to finance benefits; they rank fourth through eleventh with employer tax rates ranging from 31.6 in Italy to 23.8 in Portugal. Portugal is similar to France in ranking 8th in voluntary private spending at 2.3 percent of GDP.

The United States, Switzerland and the Netherlands offer a sharp contrast with the continental western European countries. They rank 21st, 25th, and 27th among the countries in public spending at less than 18.5 percent of GDP. All three spend heavily on health care, as the U.S. and Switzerland are ranked first and second and the Netherlands eleventh in Table 5. Switzerland and the Netherlands collect enough in taxes on benefits and consumption taxes to drive their net public spending rankings down to 26th and 31st, while the U.S. actually moves up in the rankings to 11th because they tax benefits lightly, have low sales taxes, offer substantial tax breaks for children, and use the tax system to pay subsidies to low income working families. The spending picture changes dramatically when the private spending is added. The grouping accounts for the top three countries in total private spending, which puts all three in the top 8 in net total social welfare spending in Table 7 with percentages of GDP of 29.6, 24.7 and 24.9.

Switzerland began relying on mandatory private spending for most of its health care and part of its old age pensions in the early 1990s and ranked first in 2017 in mandatory private spending at 10.8 percent. Both the U.S. and the Netherlands relied heavily on voluntary private spending into the 2000s , ranking first and second in both 1980 and 2000. The Netherlands then passed a reform that shifted a substantial share of health spending from government funds to mandatory private programs and now leads in 2017 in total private spending and mandatory private spending, while ranking second in voluntary private spending. The U.S. also relied heavily on voluntary private spending, typically funded by employers, until the 2010s. The Affordable Care Act of 2010 required employers with more than 50 full-time workers to provide health insurance. The shift from voluntary to mandatory moved the U.S. up in the rankings to second in private mandatory spending with 6.6 percent of GDP in 2017, while they continued to spend 6.1 percent of GDP in the voluntary private sector, which left them ranked third.

A relatively high share of private spending also characterizes the United Kingdom and its former colonies Canada, and Australia. All three are ranked in the top seven of OECD countries. As a result, they move up from rankings of 17th to 25th in public spending to 13 to 16th in net total spending in Table. Even though Canada is known for its government health system, Canada leads among OECD countries in 2017 in private voluntary social welfare expenditures with 7.1 percent of GDP after ranking third in 2000 and fifth in 1980. The voluntary expenditures accounted for over half of Canada's old-age pension benefits and roughly 20 percent of social welfare health expenditures in 2017. The UK has also relied on private voluntary expenditures more than most countries, ranking fourth or higher in Table 5 since 1980. Australia has instead focused on mandatory private programs with rankings of third in 2000 and fifth in 2017.

The European countries that left the Soviet bloc after the wall fell ranked between 15th for Slovenia and 31st for Lithuania in public spending of GDP. Nearly all had higher expenditures in 2015 than the 15.6 percent for the Russian Federation in Table 2. Since these countries relied very little on private spending, they rank between 20th in Slovenia and 33rd in Latvia for net total spending in Table 7. These countries rely the most on workers paying high social welfare payroll taxes, as Slovenia ranks first, Hungary third, and Poland fifth in Table 8. Slovakia 11th, and the Czech Republic 14th also rank highly in worker payroll tax rates but also rely heavily on employer payroll taxes, ranking sixth and second respectively, and they are joined by Estonia, which ranked third.

With the exceptions of Ireland and Iceland, the OECD countries that spent the least were generally the countries with GDP per capita below the median. Several countries in this group ranked highly on one or more dimensions. Iceland ranked fourth in family spending. Iceland, Ireland, Chile, and Columbia all ranked in the top 10 in mandatory private spending, and Turkey ranked 7th in the payroll tax rate paid by workers. Korea's per capita income has risen more than four-fold since 1990 and its rise in net public and private spending of 4.7 percentage points of GDP between 2005 and 2017 is tied for second with the U.S. behind Finland at 4.9 percentage points. Like Denmark, New Zealand has no payroll taxes, but its income tax and net spending is much lower.

The OECD countries all rank in the top half of the world distribution. To get a sense of what was happening in the bottom half of the distribution, consider the situations in China and India, which account for more than one-third of the world's population. China's public social protection expenditures as a share of GDP have risen from 4.7 in 2000 to 6.3 in 2015, which ranks them 100th out of 168 countries reporting information in the International Labour

Organization's database. In the early 1980s under central planning, China's employees in government and the urban state sectors received social insurance benefits under pay-as-you-go systems at the enterprise level but left out nonstate and rural workers. During China's economic transition toward markets, the government in the 1990s provided re-employment centers to provide job aid and basic social insurance for displaced workers. In the late 1990s, Basic Medical Insurance provided health insurance for all urban formal-sector workers but not their dependents. In the early 2000s China started the process of funding social protection through contributions to individual accounts by individuals, enterprises, and local and central governments. Around 2013 the urban enterprise workers programs were funded by employer contributions of 29-31 percent and worker contributions of 11 percent of the worker's wage. By 2009 new rules for employer-based social insurance and new voluntary programs were aimed at insuring migrants, the self-employed and family members. Coverage of urban workers for pensions rose from 43.9 percent in 1993 to 55.9 by 2010, medical from 1.5 to 51.3, work injury from 6 to 46.6 and maternity from 3.1 to 35.6. In 2010 the coverage for migrating workers ranged from 13 percent for unemployment to 41.1 percent for work injury (Giles, John et.al. 2013). The central government has described a strong push toward providing benefits to the rural population in the last decade, so the social spending share likely has risen.

India's GDP per capita was higher than China's in 1990 but has grown much more slowly since then. The slower growth and a much younger population has contributed to smaller changes in the public social welfare expenditures of GDP from 1.6 percent in 2000 to 2.7 percent in 2015. As a result, India ranks 143rd in the ILO rankings. Most of India's public expenditures are on poverty programs. The social insurance programs for formal sector workers and civil servants had employers and workers paying 10-12 percent each for pensions and disability while

employers pay more for health insurance. Coverage in these programs has been thin, rising from 1 percent of the total workforce (including formal and informal) in the 1950s to only 5 percent around 2009 (World Bank, 2011, p. 111).

VII. Summary

The safety nets before 1900 typically came from savings and aid from extended family, friends, charities, churches, and a limited amount of aid from local governments. Mutual societies composed of similar individuals developed to help households guard against lost earnings from sickness, injury, death, and old age. Governments often established the rules for the societies and in the late 19th century employers and unions were often involved. A handful of countries led by Germany required employers to provide some forms of social insurance, while others began to provide subsidies to the societies. Insurance companies developed and allowed many to directly purchase insurance. The societies and government programs all designed access to coverage and the percentage of earnings replaced by benefits to reduce problems with moral hazard and adverse selection. The social welfare systems in the poorer nations in the modern era seem to be roughly similar to the situation in the higher income countries circa 1900.

Over the past 100 years higher income nations have sharply increased public and private social welfare expenditures. A large share of this rise has come in increases in aid to the elderly and programs to cover health care expenses. The pure transfer programs that redistribute general tax dollars have risen relatively little as a share of GDP. A large majority of the rise has come through contributory social insurance programs in which workers and employers contribute payroll taxes into government run programs. In most countries, the employer's share of payroll taxes are higher than the worker's share. There are some major countries who have followed a

path of reliance on private programs, which are largely financed by employers. Probably the most striking feature of social welfare programs world-wide is the very large variation in expenditures and in the categories of spending, and in the mix of taxation, private programs, and government programs.

Table 1
Estimates Of Public Social Welfare Expenditures as a Percentage Relative to GDP In OECD Countries, 1900–2017

Country	1900	1930	1980	2000	2017
France	**0.6**	1.1	**20.1**	**27.7**	**31.5**
Finland	**0.8**	**3.0**	**17.8**	**22.6**	**29.6**
Denmark	**1.4**	**3.4**	**20.3**	**23.8**	**29.2**
Belgium	0.3	0.6	**23.2**	**23.7**	**28.7**
Italy	0.0	0.1	**17.3**	**22.6**	**27.6**
Austria	0.0	1.2	**21.9**	**25.7**	**27.3**
Sweden	**0.9**	**2.6**	**24.5**	**26.5**	**26.0**
Germany[a]	**0.6**	**5.0**	**21.8**	**25.5**	**25.4**
Norway	**1.2**	**2.5**	**16.1**	**20.4**	**25.2**
Greece	nv	nv	9.9	17.8	**24.7**
Spain	0.0	0.1	14.9	**19.5**	**23.9**
Portugal	0.0	0.0	9.5	**18.5**	**22.7**
Japan	0.2	0.2	10.0	15.4	**22.3**
Luxembourg	nv	nv	nv	**18.7**	**21.5**
Slovenia	nv	nv	nv	**22.1**	**21.5**
Poland	nv	nv	nv	**20.2**	**20.8**
United Kingdom	**1.0**	**2.6**	15.6	16.9	**20.5**
Hungary	nv	nv	nv	**20.1**	**19.7**
New Zealand	**1.1**	**2.4**	**16.3**	**18.4**	18.6
Czech Republic[b]	nv	0.5	nv	17.9	18.5
United States	**0.6**	0.6	12.9	14.1	18.4
Canada	0.0	0.3	13.2	15.7	18.0
Slovak Republic[b]	nv	0.5	nv	17.5	17.5
Estonia	nv	nv	nv	13.9	17.2
Switzerland	nv	nv	12.7	14.5	17.0
Australia	0.0	**2.1**	10.3	**18.2**	16.7
Netherlands	0.4	1.2	**23.0**	**19.0**	16.6
Israel	nv	nv	nv	16.2	16.2
Iceland	nv	nv	nv	14.5	16.0
Latvia	nv	nv	nv	15.4	15.9
Lithuania	nv	nv	nv	15.4	15.3
Ireland	nv	**3.9**	15.7	12.8	14.2
Colombia	nv	nv	nv	nv	13.3
Turkey	nv	nv	2.2	7.5	12.1
Costa Rica	nv	nv	nv	nv	11.9
Chile	nv	nv	nv	10.4	11.5
Korea	nv	nv	nv	4.4	10.1
Mexico	0.0	0.0	nv	4.4	7.5
Median	0.4	1.2	15.9	18.1	18.6
Maximum	1.4	5.0	24.5	27.7	31.5
Minimum	0.0	0.0	2.2	4.4	7.5

Bolded values are values above the median for reporting countries in that column.

[a] Calculated for German Empire in 1900 and 1930.
[b] Calculated for Czechoslovakia in 1900 and 1930.
nv is not available.
Bolded Values are above the median in that year.
Sources: The data for 1900 and 1930 come from Lindert (1994, p. 10). For 1980, 2000, and 2017 the data come from OECD.Stat database section on Social Expenditure-Aggregated Data, downloaded January 10, 2022.
Notes The OECD measures of government social welfare expenditures include old-age pensions, survivor benefits (not from private life insurance), incapacity-related aid, health expenditures, aid to families, unemployment benefits, income maintenance, government job training, and housing subsidies. Gross public is the most widely reported figure.

Table 2
Social Protection Expenditures, Total and By Category as Percentage Relative to GDP in Major Non-OECD Countries

	Total Public including Health			Public Social Protection Expenditures by Category						Health	
Country	2000	2015 or latest year	Latest Year	Older people without Health	Unem-ploy-ment	Labor pro-gram	Sickness, maternal, work injury, disability	General Social Assi-stance	Chil-dren without health	All	Govt.
Ukraine	**18.1**	**22.2**	2015	**13.7**	**0.4**	nv	**1.1**	**0.7**	**1.8**	**7.4**	**3.5**
Brazil	**14.2**	**18.3**	2015	**9.6**	**0.7**	**0.3**	**1.7**	**4.5**	**0.6**	**9.5**	**4.0**
Cuba	**11.9**	**18.0**	2011	nv	nv	nv	nv	**2.7**	nv	**11.7**	**10.5**
Uruguay	**17.8**	**17.0**	2015	**8.9**	**0.6**	nv	0.3	**3.1**	**0.4**	**8.8**	**6.1**
Russian Fed.	**9.4**	**15.6**	2015	**8.7**	**0.2**	nv	**2.7**	**1.8**	**0.6**	**5.4**	**3.1**
Mongolia	**8.6**	**14.4**	2015	**5.5**	0.1	**0.3**	**0.5**	**4.9**	**1.3**	4.0	**2.5**
Colombia	**7.3**	**14.1**	2015	**3.8**	np	nv	**3.9**	**0.8**	**0.4**	**7.7**	**5.5**
Costa Rica	**10.7**	**13.6**	2015	**5.7**	np	nv	**3.4**	**2.3**	**1.3**	**7.1**	**5.2**
Iran	**8.9**	**12.5**	2010	**5.9**	**0.3**	nv	**1.5**	**5.0**	**1.0**	**8.4**	**4.4**
Kuwait	**13.5**	**11.4**	2011	**3.5**	np	nv	nv	nv	nv	4.7	**4.0**
Egypt	**8.6**	**11.2**	2015	**3.0**	nv	nv	nv	nv	nv	**5.6**	1.7
Georgia	**5.1**	**10.6**	2015	**4.4**	np	nv	**0.8**	**1.4**	**2.3**	**7.1**	**2.6**
South Africa	**6.7**	**10.1**	2015	**3.4**	**0.2**	nv	**0.6**	0.0	**1.6**	**8.7**	**5.0**
Taiwan	**9.9**	**9.7**	2010	**4.7**	**0.3**	**0.2**	**0.6**	**0.5**	**0.4**	nv	nv
Venezuela	**6.1**	**8.8**	2015	**7.4**	nv	nv	**1.0**	nv	nv	4.7	**2.8**
Guatemala	3.8	**8.2**	2010	0.5	np	nv	**1.7**	0.0	**0.3**	**6.1**	2.2
Algeria	**6.3**	**7.4**	2005	**5.6**	0.0	nv	0.3	**0.9**	0.1	**6.3**	**4.1**
Tanzania	2.1	**6.8**	2010	2.0	np	nv	0.0	0.4	0.0	4.1	1.6
Namibia	**6.0**	**6.7**	2015	2.4	0.1	nv	0.3	**0.8**	**0.5**	**8.7**	**4.1**
Morocco	3.9	**6.6**	2010	**3.0**	np	nv	**1.5**	0.1	0.1	**5.2**	**2.3**
China	**4.7**	6.3	2015	**3.7**	0.1	0.1	**1.6**	0.3	0.2	5.1	**2.9**
Vietnam	**5.0**	6.3	2015	**5.5**	0.0	0.1	0.3	0.3	0.0	4.7	2.2
Zimbabwe	**5.6**	5.6	2011	0.5	np	nv	0.1	0.1	0.2	**7.5**	1.8
Malaysia	2.4	3.8	2012	0.9	np	0.0	0.1	0.1	0.0	3.7	1.9
Thailand	2.6	3.7	2015	np	0.1	0.0	**1.2**	0.1	**0.5**	3.8	**2.8**
Saudi Arabia	nv	3.6	2011	0.3	nv	nv	nv	nv	nv	**6.3**	**4.5**
Papua New Guinea	3.8	3.6	2015	0.1	np	0.0	nv	0.0	0.1	2.2	1.7
Congo, DR	0.3	3.5	2012	1.0	0.0	nv	0.3	0.1	0.1	4.2	0.4
Ethiopia	**6.0**	3.2	2010	0.3	nv	nv	nv	nv	nv	3.5	0.9
Afghanistan	0.8	2.8	2013	nv	nv	nv	nv	nv	nv	nv	nv
Burkina Faso	3.5	2.7	2015	1.0	np	nv	0.2	**1.4**	0.0	**6.0**	**2.6**
India	1.6	2.7	2016	**4.3**	nv	**0.4**	0.1	0.4	0.1	2.9	1.0
Kenya	1.4	2.3	2012	1.6	np	nv	0.1	0.1	0.1	4.1	1.8
Cameroon	1.5	2.3	2010	0.5	np	nv	**0.4**	nv	0.0	3.5	0.2
Philippines	1.1	2.2	2015	0.6	0.0	0.0	0.2	**0.5**	0.1	4.0	1.5
Uganda	4.3	2.2	2015	0.4	np	nv	**0.4**	0.3	0.0	4.0	0.6

Cote d'Ivoire	1.7	2.0	2015	1.5	np	nv	0.2	nv	**0.3**	3.3	1.0
Sudan	1.4	2.0	2010	nv	nv	nv	nv	nv	nv	**8.2**	0.7
Bangladesh	1.1	1.7	2014	0.1	np	**0.4**	0.0	0.3	0.0	2.4	0.4
Indonesia	2.0	1.1	2015	1.0	np	0.0	0.0	**0.8**	**0.7**	2.9	1.4
Myanmar	0.5	1.0	2011	0.7	np	nv	0.1	0.0	0.0	5.1	0.8
Nigeria	0.7	0.7	2013	0.9	np	nv	0.3	0.2	0.0	3.8	0.5
Pakistan	0.3	0.2	2014	1.8	np	0.0	0.0	0.2	0.0	2.9	0.9
Argentina	nv	Nv	2015	**9.0**	0.1	nv	**5.1**	**2.0**	**1.6**	**10.4**	**6.6**
Iraq	nv	Nv	nv	nv	nv	nv	nv	nv	nv	4.2	1.8
Median	4.5	6.3		2.4	0.1	0.1	0.3	0.4	0.2	5.1	2.2
Minimum	0.3	0.2		0.1	0	0	0	0	0	2.2	0.2
Maximum	18.1	22.2		13.7	0.7	0.4	3.9	5	2.3	11.7	10.5

nv means not available, np means not applicable
Bolded values are values above the median for reporting countries in that column.

Sources: Social protection expenditures in first 9 columns,come from International Labor Organization. World Social Protection Report, 2017-2019. Geneva, Switzerland: International Labor Organization, 2017, pp. 397-413. Health expenditures and government share of health expenditures in 2015 come from World Bank data downloaded on April 9, 2022 from https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS?end=2019&most_recent_year_desc=true&start= and https://data.worldbank.org/indicator/SH.XPD.GHED.GD.ZS?most_recent_year_desc=true. Values in the Public Social Protection Expenditures by Category come from a variety of years between 2009 and 2015.

Table 3

Regression Relationships Between Social Protection Expenditure as Share Relative to GDP in 2015 and Key Correlates circa 2010.

	Coeff	t-statistic	Mean	Std. Dev.	Min	Max
Per capita GDP (000) ppp$ 2010	0.03	1.06	16.6	16.4	0.6	85.8
Old Age Dependency Ratio 2010	0.63	7.91	12.7	8.0	2.6	36.0
Youth Dependency Ratio 2010	0.01	0.48	46.8	23.8	19.8	105.1
Gender Inequality Index 2015	-7.00	-1.69	0.37	0.19	0.05	0.75
Voice and Accountability	1.26	2.49	0.0	1.0	-2.1	1.6
Constant	4.28	1.76				
N	133					
Adj. R-Squared	0.79					
Total Public Social Protection as Percentage Relative to GDP			10.9	8.2	0.17	31.7

Source: International Labor Organization (2017, pp. pp. 397-413) and excel files downloaded from the ILO database on April 16, 2002 for all but the Voice and Accountability measure, which is from dataset developed by Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi (2010) and posted at the World Bank www.govindicators.org. It was downloaded on April 16, 2022. Old Age Dependency Ratio is population over 65 as a percentage relative to the working age population. Youth Dependency Ratio is child population as a percentage relative to the working age population. Voice and Accountability is a measure of access to participation in the political process and ranges from -2.5 to 2.5. The gender inequality index ranges from 0 fully equal to one fully unequal and is based on the maternal mortality rate, fertility among women aged 15 to 19, female seats in national parliament, and male and female population shares with at least secondary education, and male and female labor force participation.

Table 4
Health Care Expenditures as Share of GDP and Share of Health Expenditures Financed by Government or Compulsory Requirements, OECD and Major Countries, 1970-2017

	All Health									
	Level as Percentage Relative to GDP				Difference		Government and Compulsory Financed as Share of Total Health			
Country	**1970**	**1980**	**2000**	**2017**	**2017-1970**	**2017-2000**	**1970**	**1980**	**2000**	**2017**
Norway	4.0	5.4	**7.7**	**10.3**	**6.3**	**2.6**	**0.90**	**0.98**	**0.82**	**0.85**
Sweden	**5.4**	**7.7**	**7.3**	**10.8**	5.4	**3.5**	**0.83**	**0.92**	**0.86**	**0.85**
Germany	**5.7**	**8.1**	**9.9**	**11.3**	5.6	**1.4**	**0.72**	**0.78**	**0.78**	**0.85**
Japan	4.4	6.2	**7.2**	**10.8**	**6.4**	**3.6**	**0.69**	0.72	**0.80**	**0.84**
Denmark	nv	**8.4**	**8.1**	**10.0**	nv	**1.9**	nv	**0.87**	**0.83**	**0.84**
Luxembourg	nv	4.6	5.9	5.3	nv	-0.6	nv	**0.93**	**0.82**	**0.84**
France	**5.2**	**6.8**	**9.6**	**11.3**	**6.1**	**1.7**	**0.75**	**0.80**	**0.79**	**0.83**
United States	**6.2**	**8.2**	**12.5**	**16.8**	**10.6**	**4.3**	0.37	0.42	0.44	**0.83**
Czech Republic	nv	nv	5.7	7.1	nv	**1.4**	nv	nv	**0.90**	**0.82**
Iceland	4.7	5.9	**8.9**	**8.3**	3.6	-0.6	**0.67**	**0.88**	**0.81**	**0.82**
Netherlands	nv	**6.5**	**7.7**	**10.1**	nv	**2.4**	nv	**0.74**	0.69	**0.82**
Slovak Republic	nv	nv	5.3	6.8	nv	**1.5**	nv	nv	**0.89**	**0.80**
United Kingdom	4.0	5.1	**7.2**	**9.8**	**5.8**	**2.6**	**0.86**	**0.89**	**0.76**	**0.79**
New Zealand	**5.1**	5.7	**7.5**	**9.0**	3.9	**1.5**	**0.81**	**0.89**	**0.78**	**0.79**
Turkey	nv	2.4	4.6	4.2	nv	-0.4	nv	0.30	0.62	**0.78**
Belgium	3.9	6.2	**8.0**	**10.8**	**6.9**	**2.8**	0.00	0.00	**0.75**	**0.77**
Colombia	nv	nv	5.6	7.7	nv	**2.0**	nv	nv	**0.77**	**0.77**
Finland	**5.0**	5.9	7.1	**9.1**	4.1	**2.0**	**0.72**	**0.78**	**0.74**	**0.76**
Costa Rica	nv	nv	6.6	7.0	nv	0.5	nv	nv	0.66	**0.75**
Austria	4.8	**7.0**	**9.2**	**10.4**	5.5	1.2	0.60	0.67	**0.76**	**0.74**
Italy	nv	nv	**7.6**	**8.7**	nv	1.1	nv	nv	**0.73**	**0.74**
Estonia	nv	nv	5.2	6.6	nv	**1.4**	nv	nv	**0.77**	**0.74**
Ireland	**4.9**	**7.5**	5.9	7.1	2.2	1.2	0.00	0.00	**0.78**	0.73
Slovenia	nv	nv	**7.8**	8.2	nv	0.4	nv	nv	**0.73**	0.72
Spain	3.1	5.0	6.8	**9.0**	**5.8**	**2.2**	0.64	**0.81**	**0.71**	0.71
Canada	**6.4**	**6.6**	**8.2**	**10.8**	4.5	**2.6**	0.00	0.00	0.70	0.70
Poland	nv	nv	5.3	6.6	nv	1.3	nv	nv	0.69	0.69
Hungary	nv	nv	6.8	6.8	nv	-0.0	nv	nv	0.70	0.69
Australia	nv	5.8	**7.6**	**9.3**		**1.7**	nv	0.63	0.68	0.66
Lithuania	nv	nv	6.2	6.5	nv	0.3	nv	nv	0.69	0.66
Switzerland	4.8	**6.4**	**9.1**	**11.5**	**6.7**	**2.4**	0.00	0.00	0.58	0.66
Israel	nv	**6.9**	6.8	7.3	nv	0.5	nv	0.00	0.63	0.64
Portugal	2.3	4.8	**8.6**	**9.3**	**7.0**	0.7	0.57	0.63	0.70	0.61
Greece	nv	nv	**7.2**	8.1	nv	0.9	nv	nv	0.62	0.60
Chile	nv	nv	7.0	**9.1**	nv	**2.0**	nv	nv	0.53	0.60
Korea, South	2.6	3.4	3.9	7.1	4.5	**3.2**	0.00	0.00	0.54	0.60
Latvia	nv	nv	5.4	6.0	nv	0.5	nv	nv	0.51	0.57
Russia	nv	nv	5.0	5.4	nv	0.3	nv	nv	0.59	0.57
China (PRC)	nv	nv	4.5	5.0	nv	0.6	nv	nv	0.22	0.57
Mexico	nv	nv	4.4	5.5	nv	1.0	nv	nv	0.45	0.51
Indonesia	nv	nv	1.9	2.9	nv	1.0	nv	nv	0.31	0.47
South Africa	nv	nv	**7.4**	8.1	nv	0.7	nv	nv	0.37	0.43
Brazil	nv	nv	**8.3**	**9.5**	nv	1.1	nv	nv	0.42	0.42
India	nv	nv	4.2	3.6	nv	-0.6	nv	nv	0.23	0.27
Median	4.8	6.2	7.1	8.2	5.7	1.4	0.65	0.73	0.70	0.73

Minimum	2.3	2.4	1.9	2.9	2.2	-0.6	0.00	0.00	0.22	0.27
Maximum	6.4	8.4	12.5	16.8	10.6	4.3	0.90	0.98	0.90	0.85

Bolded values are values above the median for reporting countries in that column. nv means not available.

Source: Calculated from OECD.Stat dataset on Health Expenditure and Financing, downloaded March 29, 2022.

Table 5
Public Old-Age and Survivor, Incapacity-Related, and Family Benefits as Percentage Relative to GDP in OECD Countries, 1980, 2000, 2017

	Old Age and Survivors Cash Benefits			Incapacity related			Family Cash and In-Kind Benefits		
Country	1980	2000	2017	1980	2000	2017	1980	2000	2017
Italy	**8.5**	**13.5**	**15.6**	1.7	1.3	1.7	1.0	1.2	2.0
Greece	5.2	**10.2**	**15.5**	1.0	1.4	1.7	0.3	0.8	1.6
France	**9.3**	**11.5**	**13.6**	**2.3**	1.5	1.6	**2.2**	**3.0**	**2.9**
Austria	**10.4**	**11.9**	**13.0**	**2.6**	**2.4**	1.5	**3.2**	**2.9**	**2.6**
Portugal	3.7	**7.8**	**12.7**	1.9	**2.2**	1.7	0.6	1.0	1.2
Finland	5.4	**7.4**	**11.8**	**3.0**	**2.9**	**2.1**	**2.0**	**2.9**	**2.9**
Spain	**6.0**	**8.4**	**10.9**	**2.3**	**2.2**	**2.2**	0.5	0.9	1.2
Poland	nv	**10.5**	**10.6**	nv	**3.4**	**2.1**	nv	1.2	**2.6**
Belgium	**8.8**	**8.8**	**10.5**	**3.5**	1.7	**2.4**	**3.0**	**2.5**	**2.7**
Slovenia	nv	**10.4**	**10.4**	nv	**2.4**	1.5	nv	**2.1**	1.8
Germany	**10.4**	**10.9**	**10.2**	1.9	1.4	1.3	**2.0**	**2.1**	**2.3**
Japan	3.7	**7.0**	**9.4**	0.5	0.5	0.6	0.5	0.5	1.6
Hungary	nv	**7.4**	**8.5**	nv	**2.4**	1.4	nv	**3.0**	**2.7**
Luxembourg	**8.7**	**7.1**	**8.5**	**3.8**	**2.4**	1.4	1.6	**3.0**	**3.3**
Denmark	5.7	6.3	**8.0**	**3.8**	**2.8**	**2.8**	**2.7**	**3.4**	**3.4**
Czech Rep.	nv	6.8	**7.7**	nv	**2.2**	1.6	nv	1.8	2.0
Turkey	0.3	3.9	**7.4**	0.1	0.2	0.3	0.6	0.2	0.5
Slovak Rep.	nv	6.2	**7.3**	nv	**2.0**	1.7	nv	**2.0**	1.7
Sweden	**6.6**	6.8	7.2	**4.0**	**3.4**	**1.8**	**3.5**	**2.8**	**3.4**
United States	**6.0**	5.7	7.1	1.1	0.9	1.1	0.8	0.8	0.6
Norway	4.5	4.7	6.9	**3.3**	**3.7**	**3.8**	**1.8**	**3.0**	**3.2**
Latvia	nv	**8.7**	6.8	nv	1.2	**1.8**	nv	1.5	**2.2**
Estonia	nv	6.0	6.5	nv	1.4	**2.0**	nv	1.7	**2.8**
Lithuania	nv	**7.1**	6.2	nv	1.5	**1.8**	nv	1.3	1.8
Colombia	nv	nv	5.9	nv	nv	0.1	nv	nv	1.7
United Kingdom	5.3	4.8	5.6	0.8	**2.0**	1.6	**2.2**	**2.4**	**3.2**
Netherlands	**5.9**	4.6	5.2	**6.0**	**3.1**	**2.1**	**2.3**	1.4	1.5
New Zealand	**7.0**	4.9	4.9	1.2	**2.6**	**2.3**	**2.1**	**2.7**	**2.5**
Canada	3.1	4.2	4.8	0.7	0.9	0.7	0.7	0.9	1.7
Israel	nv	4.5	4.7	ne	1.7	**2.1**	nv	**2.4**	**2.3**
Australia	3.6	4.7	4.0	0.9	**2.1**	**1.9**	0.9	**2.9**	**2.1**
Ireland	5.0	2.9	3.7	**2.3**	1.3	1.6	1.1	1.7	1.6
Costa Rica	nv	nv	3.4	nv	nv	0.1	nv	nv	0.7
Korea	nv	1.3	2.8	nv	0.2	0.3	nv	0.1	1.1
Chile	nv	5.0	2.8	nv	0.8	0.7	nv	1.1	1.8
Mexico	nv	0.8	2.7	nv	0.1	0.0	nv	0.6	0.9
Iceland	nv	2.1	2.6	nv	1.3	**2.2**	nv	**2.1**	**3.3**
Median	5.8	6.8	7.2	2.1	1.7	1.7	1.7	1.8	2.0
Minimum	0.3	0.8	2.6	0.1	0.1	0.0	0.3	0.1	0.5

Maximum	10.4	13.5	15.6	6.0	3.7	3.8	3.5	3.4	3.4

Source: OECD.Stat dataset on Social Expenditures--Aggregate Data downloaded on March 29, 2022.

nv is not available.

Table 6
Private Social Welfare Expenditures as Percentage Relative to GDP

Source	Private (Mandatory and Voluntary)			Mandatory private			Voluntary Private		
Year	1980	2000	2017	1980	2000	2017	1980	2000	2017
Netherlands	**3.8**	**7.5**	**13.5**	0.4	**0.9**	**6.6**	**3.4**	**6.6**	**6.9**
United States	**4.8**	**9.2**	**12.5**	0.4	0.4	**6.3**	**4.4**	**8.8**	**6.1**
Switzerland	**1.7**	**9.2**	**11.8**	1.7	**8.0**	**10.8**	0.0	**1.1**	1.0
Canada	**1.5**	**5.0**	**7.1**	ne	ne	ne	**1.5**	**5.0**	**7.1**
Australia	**1.2**	**3.7**	**6.6**	ne	**2.9**	**5.1**	**1.2**	0.8	**1.4**
Iceland	nv	**4.1**	**6.5**	ne	**4.1**	**6.3**	nv	0.0	0.1
United Kingdom	**3.4**	**7.1**	**6.4**	0.2	0.6	**0.9**	**3.2**	**6.5**	**5.6**
Denmark	**5.0**	**3.9**	**3.8**	ne	ne	**2.1**	**5.0**	**3.9**	**1.7**
Sweden	1.1	**2.4**	**3.8**	ne	0.5	0.4	**1.1**	**1.9**	**3.4**
Chile	nv	**2.7**	**3.7**	nv	**2.4**	**3.1**	nv	0.3	0.6
Germany	**3.4**	**3.1**	**3.6**	1.9	**1.3**	**2.4**	**1.5**	**1.8**	1.2
France	0.7	**2.7**	**3.6**	ne	ne	0.7	0.7	**2.7**	**2.8**
Japan	0.1	**3.5**	**2.9**	0.1	0.4	0.4	0.0	**3.1**	**2.5**
Korea	nv	**2.5**	**2.7**	na	0.7	0.8	nv	**1.8**	**1.9**
Norway	0.8	2.0	**2.6**	0.2	**1.2**	**1.3**	0.6	0.8	**1.3**
Portugal	0.6	1.6	**2.5**	0.2	0.4	0.2	0.4	**1.2**	**2.3**
Israel	nv	**2.3**	**2.5**	ne	**1.1**	0.2	nv	**1.2**	**2.3**
Colombia	nv	nv	**2.4**	na	na	**1.7**	nv	nv	0.7
Austria	**2.5**	**2.1**	**2.2**	1.4	**0.9**	0.8	**1.1**	**1.2**	**1.4**
Ireland	**1.2**	**3.4**	2.0	ne	ne	ne	**1.2**	**3.4**	**2.0**
Italy	0.8	1.6	1.9	0.8	**1.1**	**1.0**	0.0	0.5	0.9
Belgium	1.0	1.7	1.9	0.1	0.0	0.0	**0.9**	**1.7**	**1.9**
Finland	0.9	1.3	1.3	ne	0.1	0.1	**0.9**	**1.2**	1.2
Spain	0.2	0.3	1.3	ne	ne	ne	0.2	0.3	**1.3**
Slovenia	nv	0.0	1.3	nv	ne	ne	nv	0.0	**1.3**
Luxembourg	0.0	0.2	1.1	ne	ne	**0.9**	0.0	0.2	0.2
Slovak Republic	nv	0.8	1.0	nv	0.2	0.1	nv	0.6	0.9
Greece	nv	0.0	1.0	ne	nv	0.5	nv	nv	0.5
Czech Republic	nv	0.3	0.9	nv	0.2	0.4	nv	0.1	0.4
New Zealand	0.1	0.5	0.7	ne	ne	ne	0.1	0.5	0.7
Poland	nv	nv	0.5	nv	ne	0.0	nv	nv	0.5
Lithuania	nv	0.3	0.5	nv	0.0	0.2	nv	0.3	0.2
Costa Rica	nv	nv	0.5	nv	na	nv	nv	nv	0.5
Mexico	nv	0.1	0.4	ne	ne	ne	nv	0.1	0.4
Hungary	nv	0.2	0.3	nv	ne	ne	nv	0.2	0.3
Turkey	nv	0.4	0.2	ne	ne	ne	nv	0.4	0.3
Estonia	nv	0.1	0.1	nv	ne	ne	nv	0.1	0.1
Latvia	nv	0.1	0.1	nv	ne	ne	nv	0.1	0.1
Median	1.1	2.0	2.1	0.4	0.7	0.8	0.9	1.0	1.2
Minimum	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Maximum	5.0	9.2	13.5	1.9	8.0	10.8	5.0	8.8	7.1

ne = not exist, nv= not available
Bolded values are above the median in the column.
Source: OECD.Stat database on Social Expenditure--Aggregated Data. Downloaded March 29, 2022.

Table 7
Public, Net Public, and Net Total (Including Private) Social Welfare Spending as Percentage Relative to GDP in 2017 in OECD Countries and Change between 2005 and 2017

	Percentage Relative to GDP in 2017					Change in Pct. GDP from 2005 to 2017		
Country	Public	Net Public	Net Public Minus Public	Net Total	Net Total Minus Net Public	Public	Net Public	Net Total
France	**31.5**	**27.8**	-3.7	**31.2**	**3.3**	**2.7**	**1.9**	**2.5**
United States	18.4	**20.3**	**1.8**	**29.6**	**9.4**	**2.9**	**3.6**	**4.7**
Belgium	**28.7**	**25.0**	-3.7	**26.6**	1.5	**3.4**	**4.0**	**3.6**
Germany	**25.4**	**23.8**	**-1.6**	**25.2**	1.5	-1.0	-0.9	-1.2
Denmark	**29.2**	**22.9**	-6.3	**25.2**	**2.3**	**4.0**	**3.4**	**3.4**
Switzerland	17.0	14.8	-2.3	**24.9**	**10.1**	0.9	nv	Nv
Italy	**27.6**	**23.1**	-4.6	**24.7**	1.6	**3.5**	**2.5**	**2.8**
Netherlands	16.6	13.5	-3.1	**24.7**	**11.1**	-3.3	-3.6	1.7
Finland	**29.6**	**23.5**	-6.2	**24.5**	1.0	**5.7**	**4.8**	**4.9**
Sweden	**26.0**	**21.8**	-4.3	**24.4**	**2.6**	-1.1	0.4	1.2
Austria	**27.3**	**22.5**	-4.7	**24.3**	**1.7**	1.3	1.5	1.7
Japan	**22.3**	**21.2**	**-1.2**	**23.8**	**2.6**	**5.2**	**4.6**	**4.6**
United Kingdom	**20.5**	**18.6**	**-1.9**	**23.3**	**4.7**	1.2	0.3	-0.1
Canada	18.0	17.5	**-0.5**	**23.1**	**5.6**	**1.9**	**2.1**	**3.5**
Norway	**25.2**	**21.0**	-4.2	**22.6**	1.6	**4.5**	**4.0**	**4.4**
Australia	16.7	16.6	**-0.1**	**22.5**	**5.9**	0.0	0.3	**3.8**
Spain	**23.9**	**21.3**	-2.7	**22.5**	1.2	**3.5**	**3.5**	**4.2**
Portugal	**22.7**	**20.0**	-2.6	**22.3**	**2.3**	0.4	-0.2	0.3
Greece	**24.7**	**20.3**	-4.4	21.1	0.9	**5.1**	nv	nv
Slovenia	**21.5**	**18.5**	-3.0	19.6	1.2	0.0	nv	nv
Iceland	16.0	13.7	-2.3	19.0	**5.3**	0.2	-0.9	1.4
Czech Rep.	18.5	17.2	**-1.4**	17.9	0.7	0.6	0.6	1.0
Luxembourg	**21.5**	16.7	-4.9	17.4	0.7	-1.3	-1.4	-1.1
Hungary	**19.7**	17.4	-2.3	17.4	-0.0	-2.2	nv	nv
Israel	16.2	15.2	**-1.1**	17.3	**2.2**	0.9	,nv	nv
Poland	**20.8**	16.7	-4.1	17.2	0.5	-0.1	-0.3	0.0
Slovak Rep.	17.5	16.2	**-1.2**	17.1	0.8	**2.1**	**2.4**	2.3
New Zealand	18.6	16.3	-2.3	16.9	0.6	0.5	0.7	0.9
Ireland	14.2	13.0	**-1.2**	14.7	1.6	-1.2	-0.6	-0.7
Estonia	17.2	14.5	-2.8	14.5	0.0	**4.4**	nv	nv
Lithuania	15.3	14.0	**-1.3**	14.4	0.4	**1.7**	nv	nv
Chile	11.5	11.1	**-0.3**	14.0	**2.9**	**2.6**	nv	nv
Latvia	15.9	13.6	-2.3	13.7	0.1	**3.6**	nv	nv
Korea	10.1	10.1	**0.0**	12.6	**2.6**	**4.2**	**4.1**	**4.7**
Turkey	12.1	11.7	**-0.4**	11.9	0.2	**2.0**	**2.6**	**2.4**
Mexico	7.5	7.2	**-0.3**	7.6	0.3	1.4	0.3	0.6
Median	18.6	17.2	-2.3	21.1	1.6	1.4	1.1	2.0
Minimum	7.5	7.2	-6.3	7.6	-0.0	-3.3	-3.6	-1.2
Maximum	29.6	25.0	1.8	29.6	11.1	5.7	4.8	4.9

Bolded values are values above the median for reporting countries in that column. nv means not available.

Source: OECD.Stat database on Social Expenditure-Aggregated Data downloaded on January 6, 2022.

Notes The OECD measures of government social welfare expenditures include old-age pensions, survivor benefits (not from private life insurance), incapacity-related aid, health expenditures, aid to families, unemployment benefits, income maintenance, government job training, and housing subsidies. Gross public is the most widely reported figure. Net public adjusts for taxes paid on benefits, consumption taxes, and tax breaks related to the social welfare categories. Net public and private adds in net private expenditures (mandatory and voluntary). The OECD did not report full information for Switzerland in 2003.

Table 8
Average Earnings and Estimated Average Income and Social Welfare Payroll Tax Rates for Single Production Workers with No Children in OECD Countries in 2017

	Percentage of Workers' Earnings Paid By						
	1	2	3	4	5	6	7
Country	**Worker earnings ($PPP)**	**Worker for income tax**	**Worker for social welfare payroll taxes**	**Employer for social welfare payroll taxes**	**Total social welfare payroll taxes (4+5)**	**Worker and Employer for taxes (3+4+5)**	**Workers' After-tax Earnings ($PPP)**
France	**50,328**	14.8	**14.4**	**35.1**	**49.5**	**64.3**	35,638
Austria	**59,714**	14.5	**18.0**	**28.5**	**46.5**	**60.9**	**40,347**
Czech Republic	28,873	13.1	**11.0**	**34.0**	**45.0**	**58.1**	21,901
Slovak Republic	23,360	10.3	**13.4**	**31.0**	**44.4**	**54.7**	17,824
Belgium	**61,493**	**26.6**	**14.0**	**28.5**	**42.5**	**69.1**	**36,536**
Hungary	27,765	15.0	**18.5**	**23.5**	**42.0**	**57.0**	18,464
Italy	44,711	**21.6**	**9.5**	**31.6**	**41.1**	**62.7**	30,790
Greece	36,317	9.7	**16.0**	**25.1**	**41.1**	**50.8**	26,981
Germany	**66,301**	**19.0**	**20.8**	**19.4**	**40.2**	**59.2**	**39,916**
Sweden	**49,983**	**18.0**	7.0	**31.4**	**38.4**	**56.4**	**37,485**
Slovenia	33,191	11.6	**22.1**	**16.1**	**38.2**	**49.8**	22,000
Spain	42,136	14.7	6.4	**29.9**	**36.3**	**51.0**	33,246
Estonia	28,094	**16.8**	1.6	**33.8**	**35.4**	**52.2**	22,925
Portugal	31,272	**16.5**	**11.0**	**23.8**	**34.8**	**51.2**	22,681
Poland	29,048	7.3	**17.8**	**16.4**	**34.2**	41.5	21,759
Turkey	30,159	13.2	**15.0**	**17.5**	**32.5**	**45.7**	21,652
Finland	**51,147**	**20.9**	9.3	**22.3**	**31.6**	**52.6**	**35,676**
Japan	48,827	7.9	**14.4**	15.2	29.6	37.5	**37,956**
Luxembourg	**68,966**	**16.7**	**12.3**	14.1	26.4	**43.1**	**48,956**
Netherlands	**65,319**	**17.2**	**13.1**	11.3	24.4	41.6	**45,508**
Norway	**58,360**	**19.4**	8.2	13.0	21.2	40.6	**42,237**
United Kingdom	**56,471**	14.0	**9.5**	10.9	20.3	34.4	**43,206**
Korea	**48,872**	5.5	8.4	10.4	18.8	24.3	**42,064**
Canada	42,852	**15.4**	7.4	11.2	18.6	34.0	33,068
United States	**53,376**	**18.4**	7.7	8.3	16.0	34.4	**39,444**
Ireland	**57,520**	**21.3**	4.0	10.8	14.8	36.1	**42,949**
Israel	39,502	9.7	8.0	5.6	13.6	23.3	32,505
Mexico	13,194	9.8	1.4	11.6	13.0	22.8	11,726
Switzerland	**75,910**	11.0	6.2	6.2	12.5	23.5	**62,834**
Iceland	**61,872**	**28.0**	0.3	6.8	7.1	35.1	**44,354**
Chile	22,731	0.0	7.0	0.0	7.0	7.0	21,140
Australia	**56,853**	**24.4**	0.0	6.0	6.0	30.3	**43,004**
Denmark	**60,136**	**36.0**	0.0	0.0	0.0	36.0	**38,467**
New Zealand	40,473	**18.1**	0.0	0.0	0.0	18.1	33,134
Median	48,850	15.2	9.4	15.6	30.6	42.4	35,657
Minimum	13,194	0.0	0.0	0.0	0.0	7.0	11,726

Maximum	75,910	36.0	22.1	35.1	49.5	69.1	62,834

Bolded values are above the median in that column.

Source: Calculated from data in the OECD.Stat data on Taxing Wages. Downloaded on April 1, 2022.

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